FACT SHEET FOR NPDES PERMIT WA0040339

Manke Lumber Company, Inc.

Superior Wood Treating

TABLE OF CONTENTS

INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Manke Lumber Company, Inc.
Facility Name and Address	Superior Wood Treating 13702 8th Street East Sumner, WA 98390
Type of Facility:	Wood Preserving
SIC Code	2491
Discharge Location	Waterbody name: White River Outfall 001: Latitude: 47° 15' 00" N Longitude: 122° 14' 48" W Outfall 002: Latitude: 47° 14' 35" N Longitude: 122° 14' 42" W
Water Body ID Number	WA-10-1030

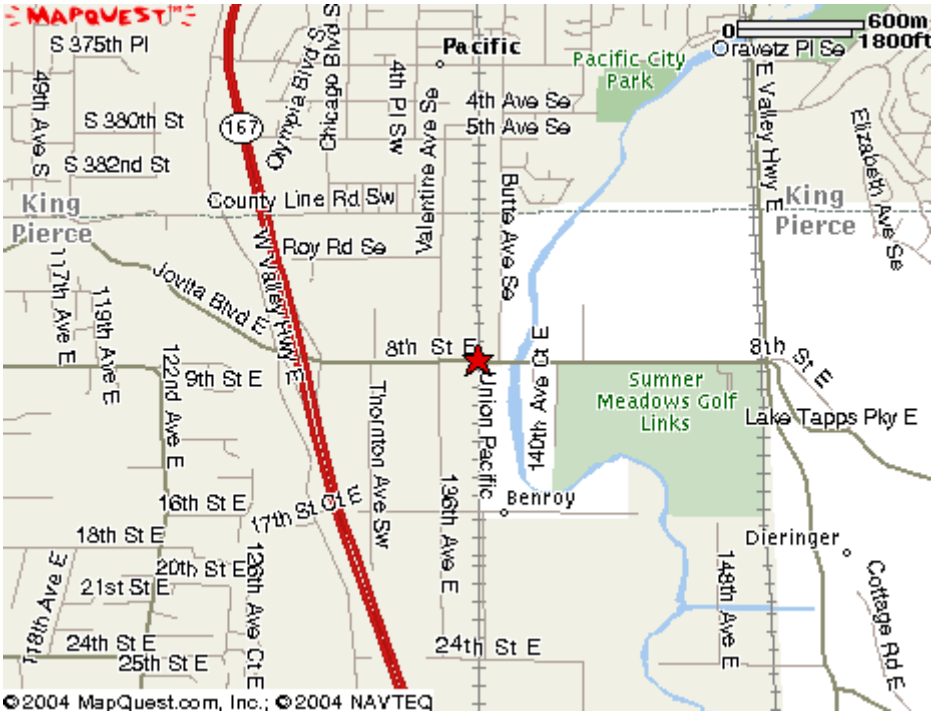

Figure 1. Location of Facility.

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

Manke Lumber Company, Inc. (Manke Lumber) of Tacoma, Washington owns a sawmill and wood preserving facility in Sumner, Washington (see Figure 1). Superior Wood Treating is a subsidiary of the Manke Lumber Company and operates the facility located in Sumner. Manke Lumber originally purchased the wood preserving facility in 1979 and has operated the sawmill since 1982 and the wood preserving facility since 1985. The site has been in operation as a sawmill since the early 1960's, and possibly even before that. Prior to Kopper's ownership (1974), the site was owned by Ericson Laminators who made custom-curved beams and other laminated wood work; they also used phenolic resins and a bovine blood derivative glue. Thrasher Lumber owned the site (1975) just prior to Manke Lumber and during that time the old evaporation ponds were covered by asphalt and gravel.

In early 1975, a fire destroyed the laminating plant. Some eye-witnesses said the ponds may have been destroyed by the fire and intense heat. Most previous owners (with the possible exception of Ericson) used settling ponds located between the plant and the White River. Liquid and suspended solid material from the plant was directed towards several ponds where it was evaporated and/or allowed to percolate through the soil. Sludges from this process settled out on the bottom of the ponds. The activity was permitted, at that time, by the Water Pollution Control Commission and thereafter (1970) by Ecology.

INDUSTRIAL PROCESS

A process flow schematic diagram is shown on Figure 2. This diagram outlines the general process that occurs at Manke Lumber's Sumner, WA facility. The following is a brief description of the industrial process as shown on the diagram.

At the Sumner site, raw timber is trucked to the site and debarked. It is then sawn into various lengths and dimensions. Bark is chipped and scrap wood is ground and sent off-site along with sawdust generated from operations. Dimensional lumber is sent to two kilns for drying. Some of the untreated dimensional lumber is exported and some goes to the local market.

The dimensional lumber is treated in one of two ways. Lumber is pressure treated with chromated copper arsenate (CCA) and amoniacal copper quarternary (ACQ) water-based formulations in a dilute solution.

The CCA treating facility was built in the mid 1990's. The CCA treating system is a closed system. The CCA treatment process is a two-stage process where CCA preservative is applied under pressure, agitated, and then vacuumed out under the first retort chamber. In the second retort chamber, hot water is applied under pressure, agitated, and then vacuumed out. All excess chemicals, fast-fix retort water, stormwater runon, and process debris are collected in a sump and recycled into the treating process. A dedicated forklift is used in the retort area which minimizes the tracking of chemicals.

The ACQ treating facility was built in 1985 and was originally used for CCA treatment. The ACQ treating system is a closed system. All excess chemicals, stormwater runon, and process debris are collected in the sump, located at the west end of the drip pad, and recycled into the treating process. A dedicated forklift is used in the retort area which minimizes the tracking of chemicals.

When the forklifts for each treatment area (CCA and ACQ) are washed, the water generated is reused as make-up water for the CCA or ACQ solutions, respectively. Both types of treated lumber are wrapped in water-proof material before being stored in the open. The drip pad, in each area, is a covered concrete slab with a curb on three sides and a berm on the fourth. The pads are sloped toward the sump collection area. Each containment system is capable of holding 1.5 times the volume of treating solution stored in the tank. The sump systems are capable of storing a 24-hour, 25-year storm. Both the CCA, and ACQ retorts and the solution holding tanks are contained in an adjoining concrete area. Trucks unloading fresh solutions of CCA, and ACQ are parked on the drip pad so any spillage is contained on the drip pad and captured in the sump where it is recycled into the respective process solutions.

Sludge produced by both treating processes, which accumulate in the pump filters, are periodically removed, deposited in containers, labeled, manifested, and shipped to a hazardous waste landfill. The drip pad and treating area are inspected yearly and certified by a licensed engineer in compliance with the Federal Register, Vol. 55, No. 235, Part 64, in particular Sub-Part W, Chapter 264.571.

The pressure treating solution is a Rentokil chromated copper arsenate type C 60 percent solution. The active ingredients of this solution are chromic acid (CrO_3, 47 percent), copperoxide (CuO, 19 percent), and arsenic pentaoxide (As_2O_5, 34 percent). In the treating process, the CCA is further diluted with water.

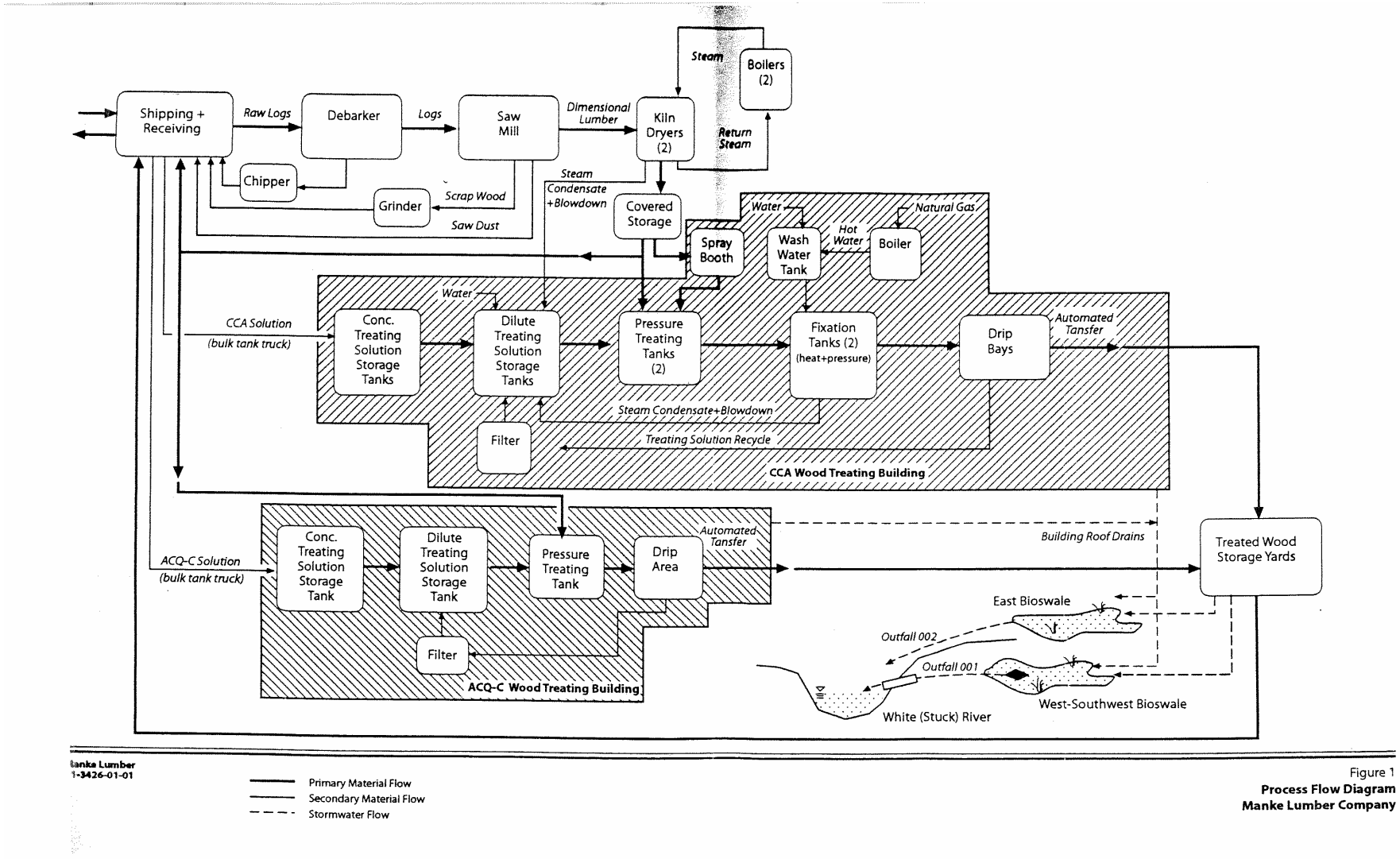

Figure 2. Process Flow Schematic (from Parametrix, November 1998).

At the Sumner site, stormwater is discharged to outfalls 001 and 002 as shown in Figure 2. All process wastewater generated is recycled and there is no process wastewater discharge to either of the outfalls.

The steam condensate and boiler blowdown from the dry kilns are recycled and used for diluting the CCA chemical preservative prior to application. There is no wastewater discharged from the laboratory. Any waste from the laboratory is disposed of at an approved TSD facility. Vehicle wash water from the dedicated forklift for the ACQ treatment process is reused as make-up water. The forklift for the CCA treatment process typically never comes in contact with non-fixed CCA preservative. In the event that the CCA forklift does come in contact with non-fixed CCA preservative, the forklift is washed and the wash water is reused as make-up water.

DISCHARGE OUTFALL

The Manke Lumber Company site is bordered by the White River on the east and the Union Pacific right of way on the west (see Figure 2). The northeastern portion of the site where raw logs are stored appears to be in the White River's floodway and the southeastern portion of the site where treated lumber is stored appears to be in the 100-year flood zone (based on City of Sumner's Flood Hazard Area Map). The treating facility is not within the 100-year flood zone. There is a higher elevation ridge-line running down the middle of the property northerly and southerly. This ridge-line effectively divides the property into east and west drainage areas. There is no storm drain system. Stormwater from the site drains to four separate vegetated bioswales.

Two outfalls have been designated to discharge stormwater to the White River. Outfall 001 drains the western portion of the site which consists of approximately 9.6 acres. The flow is towards the southwest corner of the site where the stormwater goes through a 24-inch concrete pipe with a metal trash rack at its terminus. Outfall 001 conveys drainage from the treated wood storage area and can be either a submerged or a surface discharge depending upon river stage.

Outfall 002 consists of a ditch which drains the eastern half of the site with surface discharge through rip rap along the bank of the White River. Stormwater being discharged from Outfall 002 comes from both treated and untreated wood storage areas. Outfall 002's drainage area consists of approximately 6.9 acres. Outfall 002 is located approximately 135 feet upstream of Outfall 001.

ENVIRONMENTAL STUDIES

Manke Lumber has conducted an AKART Evaluation in January 1998 which met the requirements of a previous permit. The recommendations of the evaluation were to: 1) install a new enclosed CCA wood preservation system; 2) Convert it's old CCA system to a less toxic ACQ system; 3) Recycle all process wastewater; 4) Implement BMPs; 5) Pave the treated wood product storage yards; and 6) Install bioswales to treat all the stormwater that contacts treated wood product. In 1998, this was acknowledged by the Department as meeting AKART. However, AKART for the wood treating industry has evolved and has grown since 1998 and, therefore, AKART should be re-evaluated by the Permittee.

In November 1998, Manke Lumber submitted a Stormwater Mixing Zone Evaluation. The evaluation provided a recommendation to exempt the mixing zone from 2.5% of the receiving water flow and also recommended to grant a mixing zone for each outfall separately and for three seasons of the year. The Department responded by stating the mixing zone study was substantially complete (October 2, 2000 letter). Three major clarification points were asked of the Permittee. The Department has no record that a response to these clarification points were made. During the development of this permit, the mixing zones recommended in the evaluation were requested by the Permittee. The Department re-evaluated the mixing zone study and found that the recommendations to the evaluation cannot be granted. Please refer to Appendix D for the response to the Permittee's request.

In July 2000, Manke Lumber submitted a literature review regarding the Effects of Stormwater on Salmonids in the Lower White River. This report was meant to provide support that the exemption to using 2.5% of the receiving water flow can be granted. In correspondence dated October 16, 2000 from the State of Washington Fish and Wildlife (WDFW), WDFW strongly disagreed with granting a larger mixing zone to the Permittee and did not concur with the assessment provided in the report. On December 18 and 20, 2000, the Permittee's consultants and attorney provided a response to WDFW's October 16 letter. There is no further records of correspondence showing that WDFW's concerns were addressed or that this report has been approved by WDFW or the Department of Ecology.

In December 2000, Manke Lumber submitted a Water Effects Ratio (WER) Study for Copper Workplan. The Department reviewed the study, provided comments to the Permittee. As a result, the Workplan was revised and resubmitted in July 2001. Due to an extended vacancy in the South Puget Sound Basin Industrial Permit Manager position, the second submittal of the workplan has not been reviewed and no formal comments were provided to Permittee at this time.

In November 2000, Manke Lumber submitted a Preliminary Determination of WERs for Copper Using *Ceriodaphnia dubia*. Due to the same reasons that the second submittal of the WER workplan was not yet reviewed or responded to (as mentioned above), this preliminary determination has also not yet been reviewed by the Department.

PERMIT STATUS

Manke Lumber's National Pollution Discharge Elimination System (NPDES) Permit for stormwater discharge was first issued on June 30, 1993; and on August 2, 1996, the permit was modified. On August 4, 1998, the permit was extended until June 30, 1999. On June 27, 2001, the permit was extended again until June 30, 2002.

The previous permit placed interim and final effluent limitations on oil and grease, arsenic, total chromium, copper, and pH. The intent of the previous permit was to establish final effluent limitations but provide the facility with interim effluent limitations during which the facility could evaluate and implement measures to meet final effluent limitations. The previous permit authorized the use of the interim effluent limitations as long as the previous permit was in effect.

An application for permit renewal was submitted on time to the Department on February 16, 1998 and accepted by the Department on April 30, 1998. Although this permit application is

somewhat dated, it is still applicable to the facility's current industrial operation, and stormwater effluent.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on February 17, 2004.

During the history of the previous permit (from September 1996 through March 2004), the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department except for one violation of arsenic in December 1997, one violation of oil and grease in October 1997, and one violation of pH in October 2002.

STORMWATER CHARACTERIZATION

The stormwater discharge is characterized for the following parameters as shown in Table 1. The data is obtained from the DMRs submitted to the Department from September 1996 through March 2004.

Table 1: Wastewater Characterization

	Outfall 001 Concentration				Outfall 002 Concentration			
Parameter	Mean	95th Percentile	Max	Min	Mean	95th Percentile	Max	Min
Flow, cfs	0.22	0.88	1.47	0.02	7.43	16.47	22.00	1.01
Flow Total, gallons	115,208	212,408	533,623	32,538	91,389	188,574	383,542	21,628
pH, s.u.	6.66	NA	7.36	6.07	6.77	NA	7.61	5.98
Oil and Grease, mg/L	0	0	11	0	0	5	7	0
TSS, mg/L	12	55	74	0	10	38	160	0
Arsenic, µg/L	156	340	450	5	135	257	300	21
Total Chromium, µg/L	121	348	440	0	84	222	340	0
Copper, µg/L	65	153	220	0	155	302	453	35

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology - or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

PROCESS WASTEWATER

EPA has promulgated effluent guidelines and standards for the timber products processing point source category in Code of Federal Regulations 40 CFR Part 429. The Manke Lumber Company's Sumner, WA sawmill and wood treating facility falls under Subcategory F of 40 CFR Part 429 which deals with pressure wood preserving treatment processes employing water borne inorganic salts. Effluent limitation representing "best practicable control technology currently available" (BPT) and "best available technology economically achievable" (BAT) for direct dischargers within this Subcategory is zero discharge of process wastewater pollutants into navigable waters. This is considered equivalent to "all known, available, and reasonable methods of prevention, control, and treatment" (AKART) for this industry under State laws.

Process wastewater is defined in 40 CFR Part 429.11. The term "process wastewater" specifically excludes non-contact cooling water, material storage yard runoff (either raw natural or process wood storage), and boiler blowdown. However, these excluded types of wastewaters must be authorized in a permit prior to discharge into the waters of the State.

For the purposes of this Permit, process wastewater includes all wastewaters generated as part of the conditioning of the wood in the treatment cylinder. Other sources of process wastewater include, but are not limited to, preservative formulation; recovery and regeneration wastewater; water used to wash excess preservative from the surface of preserved wood; and condensate from drying kilns used to dry preserved or surface protected lumber. Any rainwater or stormwater which falls in the retort area, drip pad area, or tank farm area is also considered process wastewater.

Discharge of stormwater from untreated and treated product storage areas are covered in this Permit.

STORMWATER

Technology-based limitations for stormwater discharge are based on an evaluation of AKART applicable to the stormwater discharge. Currently, the control technology in reducing pollutants in the effluent is generally through the application of best management practices

(BMPs). However, stormwater from the facility is collected by four separate vegetated bioswales before being discharged to the White River. The degree of treatment from these vegetated bioswales has not been evaluated in detail to establish how much of the pollutant loading is being removed in these systems. A reduction in the effluent metal concentrations has been observed in the previous permit cycle with the implementation of BMPs and bio-treatment pond/bioswale systems. However, recently it appears that the concentration of copper has been increasing; this may be due to the use of more ACQ preservative instead of using CCA. In light of the significant changes in this permit, AKART should be re-evaluated for this facility to ensure that it is being maintained.

Arsenic: Performance-based interim and final limitations for arsenic have been evaluated and established in recognition of the desired human health arsenic criteria. The data utilized to develop performance-based limitations for arsenic is from September 1996 through March 2004. Please refer to Appendix C – Technical Calculations of this permit for a printed copy of the calculation spreadsheet. The performance-based limit for arsenic was determined to be 309 µg/L on a maximum daily basis. The performance-based limit is less than the arsenic water quality criteria of 390 µg/L and the previous interim limit of 381 µg/L.

Total Chromium: Performance-based interim limitations for total chromium have been evaluated and established in recognition of providing the facility with some time to evaluate, plan, and implement additional stormwater treatment in order to meet the final total chromium effluent limitation of this permit. The data utilized to develop the performance-based interim limitations for total chromium is from September 1996 through March 2004. Please refer to Appendix C – Technical Calculations of this permit for a printed copy of the calculation spreadsheet. The performance-based limit for total chromium was determined to be 210 µg/L on a maximum daily basis. The performance-based interim limit is less than the previous interim limit of 1,030 µg/L.

Copper: Performance-based interim limitations for copper have been evaluated and established in recognition of providing the facility with some time to evaluate, plan, and implement additional stormwater treatment in order to meet the final copper effluent limitation of this permit. The data utilized to develop the performance-based interim limitations for copper is from September 1996 through March 2004. Please refer to Appendix C – Technical Calculations of this permit for a printed copy of the calculation spreadsheet. The performance-based limit for copper was determined to be 238 µg/L on a maximum daily basis. The performance-based interim limit is less than the previous interim limit of 540 µg/L.

TSS: The technology-based limit for total suspended solids (TSS) was established (50 mg/L) in the previous permit with an option provided for the Permittee to conduct a site-specific study to evaluate control technology to reduce TSS. The Permittee has c conducted this evaluation in an AKART Evaluation (Parametrix, Inc., January 1998) and has concluded that further treatment for TSS removal was not feasible at that time. As a result, the technology-based effluent limitation for TSS of 50 mg/L is retained and used in this permit.

Oil & Grease: The previous permit has also established an oil and grease effluent limitation of 10 mg/L, as a daily maximum limit. This is also a technology-based limitation. This limitation is retained and used in this permit. This limitation reflects effluent quality that can be obtained through the use of a properly operated and maintained stormwater treatment technology such as bioswales.

pH – The technology-based limits for pH were established in the previous permit and are standard for most NPDES permits. The pH technology-based limits are based on simple pollution prevention and neutralization techniques. Although Manke Lumber does not currently use pH neutralization techniques, there were no problems with meeting the pH permit limitations during the previous permit cycle. As a result, these pH limitations will be retained for this permit.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural

conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the White River which is designated as a Class A receiving water in the vicinity of the outfall.

Characteristic uses include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

Lake Tapps is located on top of the bluffs east of the White River with an elevation difference of 500 feet. Many springs are located in the area and some (e.g. Salmon and Sumner springs) provide drinking water to communities in Puyallup and Sumner. There are a total of 44 wells (as recorded in Ecology's 1988 site inspection report) within a 3-mile radius of the site. Seasonal levels of the nearest saturated zone are 20-50 feet deep. The actual producing zone appears to be between 50-120 feet.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized in Table 2:

Table 2. Relevant Water Quality Criteria for Receiving Waterbody

Total Ammonia	7.94 mg/L (expressed as N) acute (based on a receiving water temperature of 15.6 °C and a receiving water pH of 7.8)
Arsenic	360 µg/L (based on the dissolved fraction); 0.018 µg/L (based on human health-based limitations)
Copper	6.33 µg/L acute (based on an assumed receiving water hardness of 35 mg/L)
Chromium (hex)	15 µg/L
Chromium (tri)	232 µg/L acute (based on the trivalent form and an assumed receiving water hardness of 35 mg/L)
Dissolved Oxygen	8 mg/L minimum
pH	6.5 to 8.5 standard units with a human caused variation of 0.5 units within this range
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

The White River in the vicinity of outfalls 001 and 002 is listed on the Washington State 303(d) list for fecal coliform and temperature. There is no evidence that either of these parameters would be impacted by Manke Lumber Company, Inc.'s stormwater discharge.

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The acute dilution factor for the discharge from both outfalls 001 and 002 is 7.2. This dilution factor has been determined to be the most conservative allowable mixing zone and is described in Stormwater Mixing Zone Evaluation (Parametrix, Inc., November 1998). The acute dilution factor, in this case, is based on 2.5% of the receiving water flow during critical conditions. The acute dilution factor is authorized only to be used for total chromium and copper final effluent limitations.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of

calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The critical river flow condition for Manke Lumber's discharge to the White River has been shown to most likely occur September through November. Ambient data at critical conditions in the vicinity of the outfall was taken from a nearby Department of Ecology ambient river monitoring station data (Station number 10C085 - White River near Sumner). The ambient background data used for this permit includes the following:

Table 3. Relevant Ambient Background Data for the White River.

Parameter	Value used
White River flow during Sept.-Nov.	553 cfs
Temperature	15.6° C
pH	7.8
Hardness	35 mg/L as $CaCO_3$ (assumed)

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: arsenic, total chromium, and copper. These toxic parameters were determined to be in exceedance of water quality criteria during critical conditions. The critical condition for stormwater appears to occur during the months of September through November based on the Stormwater Mixing Zone Evaluation (Parametrix, Inc., November 1998).

Final effluent limitation was derived for copper. The resultant final effluent limitation for copper is 46 µg/L, on a maximum daily basis, respectively.

The proposed permit contains a compliance schedule for meeting the water quality-based limits for copper. As part of authorization of this compliance schedule, the Department requires the Permittee to evaluate the possibility of complying with the limitations by changes other than construction and should be discussed as part of the Engineering Report.

The proposed permit contains interim limits for copper as required by Chapter 173-201A WAC. The limits are based on existing demonstrated performance of the Permittee. Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

In accordance with WAC 173-205-040, the Permittee's effluent has been determined to have the potential to contain toxic chemicals. The proposed permit would ordinarily contain requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in Chapter 173-205 WAC. However, the Permittee is improving pollution control in order to meet other regulatory requirements. The results of an effluent characterization for toxicity would not be accurate until after the improvements have been completed.

Special Condition S8 delays effluent characterization for WET until the completion or startup of the new or improved wastewater facility required in Special Condition S7. WAC 173-205-030(4) allows the Department to delay effluent characterization for WET for existing facilities that are under a compliance schedule in a permit to implement technology-based controls or to achieve compliance with surface water quality-based effluent limits.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

Of the 91 numeric human-health based criteria only arsenic has any relevancy to the Manke Lumber site. The human health based criteria for arsenic is 0.018 µg/L based on consumption of water and fish. This is the fresh water criteria and is based on the inorganic fraction of arsenic only. The criteria is applicable at the edge of a mixing zone with a dilution factor established using the river harmonic mean flow. The arsenic human health criteria is based on a 70-year lifetime of daily exposures, two liters/day ingestion rate for drinking water, 6.5 grams/day ingestion rate for fish or shellfish, and a one-in-one million excess cancer risk.

It should be noted that stormwater is a discontinuous discharge and is approximately present only during nine months of the year. It is thus not clear how the criteria (or a modification thereof to allow for a discontinuous exposure) would be applied to stormwater discharge.

The arsenic human health based criteria of 0.018 µg/L as established in the National Toxics Rule differs from the maximum contaminant level (MCL) of 50 µg/L established in the Safe Drinking Water Act (SDWA). The August 5, 1997 Federal Register (California Toxics Rule) cited an EPA document entitled: Issues Related to Health Risk of Arsenic. In this document, EPA

summarized the controversial health risk issues associated with regulation of arsenic, but most importantly the document contains a risk management decision made by the EPA assistant administrators of the different offices that deal with arsenic regulation. This decision is written as follows (direct excerpt from document):

> *Publish a notice which announces that as a risk management decision, EPA is in the process of conducting a reassessment in order to reconcile the CWA and SDWA criteria. The result of this reassessment would be presented in a risk characterization. During the reassessment, the existing criteria would remain in place. EPA would work with NTR States and others to resolve special problems in the implementation of those criteria through special regulatory relief mechanisms.*

The December 10, 1998 Federal Register (Vol. 63, No. 237, pages 68354-68363) reiterated EPA's position that the criteria for arsenic was currently being re-assessed and that upon completion of the reassessment, EPA would publish the revised criteria as appropriate.

At the present time, the Department does not have an implementation policy on arsenic criteria established in the National Toxics Rule as it applies to stormwater discharge and, as such, it will not be included as an effluent limitation in the Permit at this time. However, best management practices should be continued to be implemented and/or improved to reduce arsenic concentrations in the discharge.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

A hydrogeologic site assessment was required of Manke Lumber in their existing permit, since the facility has a potential to impact ground water quality. Treated wood was stored in unpaved and uncovered storage areas (even though most of the treated wood that is stored in unpaved areas was wrapped in water resistant material). The Hydrogeologic Assessment Report (Golder Associates, December 1994) stated that "the soils below the Manke facility are considered moderately permeable and should accept recharge from precipitation or stormwater drainage."

Due to considerable improvements made at this facility's site to address stormwater infiltration, the facility's drainage area has been almost completely paved where building structures do not exist. Therefore, this Permittee has virtually no discharge to ground and therefore no limitations are required based on potential effects to ground water.

The area where untreated wood is stored is not completely paved (northern portion of the site). However, the impacts of the untreated wood storage to groundwater is considered negligible *if* BMPs are properly identified and followed in order to minimize any adverse impacts from stormwater infiltration.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED JUNE 30, 1993 (AS MODIFIED ON AUGUST 2, 1996)

Table 4. Comparison of Existing and Proposed Interim and Final Effluent Limitations.

Existing Interim Limitations	**Proposed Interim Limitations**
Arsenic: 381 µg/L max. daily limit	Arsenic: 309 µg/L max. daily limit
Total Chromium: 1030 µg/L max. daily limit	Total Chromium: 210 µg/L max. daily limit
Copper: 540 µg/L max. daily limit	Copper: 238 µg/L max. daily limit
Oil and Grease: 10 mg/L max. daily limit	Oil and Grease: 10 mg/L max. daily limit
TSS: no limitations	TSS: 50 mg/L max. daily limit
pH: between 6 and 9 standard units	pH: between 6 and 9 standard units

Existing Final Limitations	**Proposed Final Limitations**
Arsenic: 360 µg/L max. daily limit	Arsenic: 309 µg/L max. daily limit
Total Chromium: 16 µg/L max. daily limit	Total Chromium: 210 µg/L max. daily limit
Copper: 18 µg/L max. daily limit	Copper: 46 µg/L max. daily limit
Oil and Grease: 10 mg/L max. daily limit	Oil and Grease: 10 mg/L max. daily limit
TSS: no limitations	TSS: 50 mg/L max. daily limit
pH: between 6 and 9 standard units	pH: between 6 and 9 standard units

The proposed final limitations are higher than the existing final limitations (in the previous permit) for total chromium and copper. The higher final copper limitations are based on the decision to grant Manke Lumber Company an acute dilution factor of 7.2; and the default copper translator of 0.996 were not taken into account when developing the final limitations in the previous permit. The total chromium translator of 0.982 was not taken into account when developing the final limitations in the previous permit. Furthermore, water quality standard for chromium may have changed since the previous permit was developed. The determination to authorize the acute mixing zone of 7.2 was based on the Stormwater Mixing Zone Evaluation – Manke Lumber Company (Parametrix, Inc., November 1998). The mixing zone evaluation showed that the acute mixing zone was most limited by 2.5% of the river flow as defined in WAC 173-201A-100.

The proposed arsenic and total chromium final limitations were not increased since performance data showed that the facility can currently meet arsenic criteria at the end of pipe (no mixing zone is necessary). Arsenic and total chromium limitations that are based on performance rather than based on water quality criteria were more stringent. The more

stringent performance-based arsenic limitation was retained in recognition of striving towards meeting the human health-based arsenic criteria of 0.018 µg/L even though there is no guidance on how this may apply to stormwater at this time (as explained in the Human Health Section of this Fact Sheet). Therefore, performance-based arsenic interim discharge limitations is retained and applied to the final discharge limitations.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S1. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters, the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.*

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

Condition S2 is based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste.

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee update the solid waste plan designed to prevent solid waste from causing pollution of the waters of the state. The plan must be submitted to the local permitting agency for approval, if necessary, and to the Department.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). An operation and maintenance manual will be submitted as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150). It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit.

STORMWATER POLLUTION PREVENTION PLAN

Manke Lumber discharges only stormwater. A Stormwater Pollution Prevention Plan (SWPPP) was required to be developed in the previous NPDES Permit. This proposed Permit requires that the Permittee review the existing SWPPP and update as necessary.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Golder Associates. December 1994. Hydrogeologic Assessment – Manke Lumber Company – Saw Mill and Wood Preserving Facility – NPDES Permit No. WA-004033-9.

Parametrix, Inc. January 1998. AKART Evaluation – Manke Lumber Company.

Parametrix, Inc. November 1998. Stormwater Mixing Zone Evaluation – Manke Lumber Company.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations (http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on May 16, 2004 and May 23, 2004 in the *News Tribune* to inform the public that an application had been submitted and to invite comment on the reissuance (or issuance) of this permit.

The Department will publish a Public Notice of Draft (PNOD) on September 13, 2004 in the *News Tribune* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office - Water Quality
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 360/407-6280, or by writing to the address listed above.

This permit and fact sheet were written by John Diamant, P.E.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at http://www.ecy.wa.gov.

Ammonia Criteria Calculation

Calculation Of Ammonia Concentration and Criteria for fresh water. Based on EPA Quality Criteria for Water (EPA 400/5-86-001) and WAC 173-201A. Revised 1-5-94 (corrected total ammonia criterion). Revised 3/10/95 to calculate chronic criteria in accordance with EPA Memorandum from Heber to WQ Stds Coordinators dated July 30, 1992.

INPUT	
1. Ambient Temperature (deg C; 0<T<30)	15.6
2. Ambient pH (6.5<pH<9.0)	7.80
3. Acute TCAP (Salmonids present- 20; absent- 25)	20
4. Chronic TCAP (Salmonids present- 15; absent- 20)	15

OUTPUT	
1. Intermediate Calculations:	
Acute FT	1.36
Chronic FT	1.41
FPH	1.12
RATIO	14
pKa	9.54
Fraction Of Total Ammonia Present As Un-ionized	1.7759%
2. Un-ionized Ammonia Criteria	
Acute (1-hour) Un-ionized Ammonia Criterion (ug NH3/L)	171.5
Chronic (4-day) Un-ionized Ammonia Criterion (ug NH3/L)	37.5
3. Total Ammonia Criteria:	
Acute Total Ammonia Criterion (mg NH3+ NH4/L)	9.7
Chronic Total Ammonia Criterion (mg NH3+ NH4/L)	2.1
4. Total Ammonia Criteria expressed as Nitrogen:	
Acute Ammonia Criterion as mg N	7.94
Chronic Ammonia Criterion as N	1.74

PERFORMANCE-BASED EFFLUENT LIMITS								
USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION								
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE								
			LOGNORMAL TRANSFORMED MEAN =				4.7584	
			'LOGNORMAL TRANSFORMED VARIANCE =				0.1759	
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =							1	
	AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =						0	
						E(X) =	127.2775	
						V(X) =	3116.105	
						VARn	0.1759	
						MEANn=	4.7584	
						VAR(Xn)=	3116.105	
			MAXIMUM DAILY EFFLUENT LIMIT =				309.212	
			AVERAGE MONTHLY EFFLUENT LIMIT =				232.383	
			232.3831 219.1048					
M-PT	DMR DATE	Value	LN(X)		M-PT	DMR DATE	Value	LN(X)
1	9/1/1996	230	5.44		1	5/1/2001	190	5.25
1	10/1/1996	270	5.60		2	5/1/2001	150	5.01
1	11/1/1996	270	5.60		1	10/1/2001	179	5.19
2	11/1/1996	290	5.67		2	10/1/2001	148	5.00
1	12/1/1996	170	5.14		1	11/1/2001	149	5.00
1	3/1/1997	280	5.63		2	11/1/2001	100	4.61
1	4/1/1997	140	4.94		1	12/1/2001	127	4.84
2	4/1/1997	190	5.25		2	12/1/2001	104	4.64
2	5/1/1997	230	5.44		1	1/1/2002	162	5.09
1	12/1/1997	450	6.11		2	1/1/2002	137	4.92
1	11/1/1998	360	5.89		1	2/1/2002	216	5.38
2	11/1/1998	160	5.08		2	2/1/2002	166	5.11
1	12/1/1998	210	5.35		1	3/1/2002	186	5.23
2	12/1/1998	120	4.79		2	3/1/2002	156	5.05
1	1/1/1999	210	5.35		1	4/1/2002	152	5.02
2	1/1/1999	150	5.01		2	4/1/2002	165	5.11
1	2/1/1999	96	4.56		2	10/1/2002	149	5.00
2	2/1/1999	96	4.56		1	11/1/2002	183	5.21
1	3/1/1999	110	4.70		2	11/1/2002	130	4.87
2	3/1/1999	120	4.79		1	12/1/2002	109	4.69
1	4/1/1999	4.8	1.57		2	12/1/2002	86.5	4.46
2	4/1/1999	120	4.79		1	1/1/2003	140	4.94
1	5/1/1999	7.0	1.95		2	1/1/2003	125	4.83
2	5/1/1999	94	4.54		1	2/1/2003	91.4	4.52
2	10/1/1999	130	4.87		2	2/1/2003	92.9	4.53
1	11/1/1999	200	5.30		1	3/1/2003	108	4.68
2	11/1/1999	140	4.94		2	3/1/2003	79.5	4.38
1	12/1/1999	14	2.64		1	4/1/2003	134	4.90
2	12/1/1999	89	4.49		2	4/1/2003	102	4.62
1	1/1/2000	180	5.19		1	10/1/2003	129	4.86
2	1/1/2000	150	5.01		2	10/1/2003	132	4.88
1	2/1/2000	13	2.56		1	11/1/2003	95.1	4.55
2	2/1/2000	83	4.42		2	11/1/2003	90.6	4.51
1	3/1/2000	7.1	1.96		1	12/1/2003	131	4.88
1	4/1/2000	13	2.56		2	12/1/2003	21	3.04
2	4/1/2000	130	4.87		1	1/1/2004	88.9	4.49
1	5/1/2000	220	5.39		2	1/1/2004	108	4.68
2	5/1/2000	130	4.87		1	2/1/2004	76.6	4.34
1	10/1/2000	360	5.89		2	2/1/2004	68.6	4.23
2	10/1/2000	300	5.70		1	3/1/2004	89.2	4.49
1	11/1/2000	200	5.30		2	3/1/2004	73.6	4.30
2	11/1/2000	150	5.01					
1	1/1/2001	260	5.56				Mean	4.75
2	1/1/2001	260	5.56				Standard Dev.	1.084525
1	3/1/2001	32	3.47					
2	3/1/2001	150	5.01				CV	0.228143
1	4/1/2001	150	5.01					
2	4/1/2001	130	4.87					

Total Chromium Performance-Based Limits Calculations

PERFORMANCE-BASED EFFLUENT LIMITS								
USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION								
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE								
			LOGNORMAL TRANSFORMED MEAN =				4.2452	
			'LOGNORMAL TRANSFORMED VARIANCE =				0.2244	
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =							4	
	AUTOCORRELATION FACTOR(ɳe)(USE 0 IF UNKNOWN) =						0	
						E(X) =	78.0554	
						V(X) =	1532.809	
						VARn	0.0610	
						MEANn=	4.3269	
						VAR(Xn)=	383.202	
			MAXIMUM DAILY EFFLUENT LIMIT =				209.995	
			AVERAGE MONTHLY EFFLUENT LIMIT =				113.658	
			113.6582	110.2572				
M-PT	DMR DATE	Value	LN(X)		M-PT	DMR DATE	Value	LN(X)
1	9/1/1996	260	5.56		1	5/1/2000	55	4.01
2	9/1/1996	60	4.09		2	5/1/2000	54	3.99
1	10/1/1996	220	5.39		1	10/1/2000	270	5.60
2	10/1/1996	80	4.38		2	10/1/2000	160	5.08
1	11/1/1996	380	5.94		1	11/1/2000	170	5.14
2	11/1/1996	340	5.83		2	11/1/2000	86	4.45
1	12/1/1996	440	6.09		1	1/1/2001	340	5.83
2	12/1/1996	230	5.44		2	1/1/2001	130	4.87
1	1/1/1997	250	5.52		1	3/1/2001	17	2.83
2	1/1/1997	200	5.30		2	3/1/2001	45	3.81
1	2/1/1997	79	4.37		1	4/1/2001	46	3.83
2	2/1/1997	85	4.44		2	4/1/2001	74	4.30
1	3/1/1997	170	5.14		1	5/1/2001	72	4.28
2	3/1/1997	220	5.39		2	5/1/2001	69	4.23
1	4/1/1997	55	4.01		1	10/1/2001	116	4.75
2	4/1/1997	110	4.70		2	10/1/2001	56.1	4.03
1	5/1/1997	44	3.78		1	11/1/2001	170	5.14
2	5/1/1997	48	3.87		2	11/1/2001	72.1	4.28
1	9/1/1997	130	4.87		1	12/1/2001	60.2	4.10
2	9/1/1997	94	4.54		2	12/1/2001	46.4	3.84
1	10/1/1997	190	5.25		1	1/1/2002	65.2	4.18
2	10/1/1997	89	4.49		2	1/1/2002	68.7	4.23
1	11/1/1997	85	4.44		1	2/1/2002	129	4.86
2	11/1/1997	46	3.83		2	2/1/2002	102	4.62
1	12/1/1997	370	5.91		1	3/1/2002	81.3	4.40
2	12/1/1997	280	5.63		2	3/1/2002	73.5	4.30
1	1/1/1998	220	5.39		1	4/1/2002	36.9	3.61
2	1/1/1998	180	5.19		2	4/1/2002	33.2	3.50
1	2/1/1998	10	2.30		2	10/1/2002	86.8	4.46
2	2/1/1998	23	3.14		1	11/1/2002	92.4	4.53
1	3/1/1998	46	3.83		2	11/1/2002	63.2	4.15
2	3/1/1998	70	4.25		1	12/1/2002	57.3	4.05
1	5/1/1998	53	3.97		2	12/1/2002	55.8	4.02
2	5/1/1998	22	3.09		1	1/1/2003	80.4	4.39
2	10/1/1998	46	3.83		2	1/1/2003	107.0	4.67
1	11/1/1998	290	5.67		1	2/1/2003	34.7	3.55
2	11/1/1998	84	4.43		2	2/1/2003	42.2	3.74
1	12/1/1998	230	5.44		1	3/1/2003	25.2	3.23
2	12/1/1998	93	4.53		2	3/1/2003	22.6	3.12
1	1/1/1999	250	5.52		1	4/1/2003	70.0	4.25
2	1/1/1999	93	4.53		2	4/1/2003	32.6	3.48
1	2/1/1999	35	3.56		1	10/1/2003	63.5	4.15
2	2/1/1999	40	3.69		2	10/1/2003	54.5	4.00
1	3/1/1999	99	4.60		1	11/1/2003	103.0	4.63
2	3/1/1999	36	3.58		2	11/1/2003	77.4	4.35
1	4/1/1999	2.5	0.92		1	12/1/2003	39.2	3.67
2	4/1/1999	45	3.81		2	12/1/2003	10.0	2.30
1	5/1/1999	3	1.10		1	1/1/2004	90.1	4.50
2	5/1/1999	30	3.40		2	1/1/2004	85.4	4.45
2	10/1/1999	50	3.91		1	2/1/2004	35.6	3.57
1	11/1/1999	190	5.25		2	2/1/2004	27.7	3.32
2	11/1/1999	88	4.48		1	3/1/2004	50.4	3.92
1	12/1/1999	12	2.48		2	3/1/2004	31.3	3.44
2	12/1/1999	42	3.74					

Copper Performance-Based Limits Calculations

PERFORMANCE-BASED EFFLUENT LIMITS								
USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION								
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE								
			LOGNORMAL TRANSFORMED MEAN =				4.3552	
			'LOGNORMAL TRANSFORMED VARIANCE =				0.2300	
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =							4	
	AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =						0	
						E(X) =	87.3733	
						V(X) =	1974.150	
						VARn	0.0626	
						MEANn=	4.4389	
						VAR(Xn)=	493.537	
			MAXIMUM DAILY EFFLUENT LIMIT =				237.625	
			AVERAGE MONTHLY EFFLUENT LIMIT =				127.816	
			127.8164	123.9182				
M-PT	DMR DATE	Value	LN(X)		M-PT	DMR DATE	Value	LN(X)
1	9/1/1996	200	5.30		1	5/1/2000	79	4.37
2	9/1/1996	96	4.56		2	5/1/2000	240	5.48
1	10/1/1996	130	4.87		1	10/1/2000	110	4.70
2	10/1/1996	75	4.32		2	10/1/2000	290	5.67
1	11/1/1996	100	4.61		1	11/1/2000	48	3.87
2	11/1/1996	78	4.36		2	11/1/2000	160	5.08
1	12/1/1996	150	5.01		1	1/1/2001	59	4.08
2	12/1/1996	81	4.39		2	1/1/2001	160	5.08
1	1/1/1997	63	4.14		1	3/1/2001	12	2.48
2	1/1/1997	50	3.91		2	3/1/2001	130	4.87
1	2/1/1997	81	4.39		1	4/1/2001	130	4.87
2	2/1/1997	68	4.22		2	4/1/2001	35	3.56
1	3/1/1997	68	4.22		1	5/1/2001	220	5.39
2	3/1/1997	44	3.78		2	5/1/2001	60	4.09
1	4/1/1997	53	3.97		1	10/1/2001	52.1	3.95
2	4/1/1997	46	3.83		2	10/1/2001	153.0	5.03
1	5/1/1997	68	4.22		1	11/1/2001	62.7	4.14
2	5/1/1997	99	4.60		2	11/1/2001	116.0	4.75
1	9/1/1997	63	4.14		1	12/1/2001	28.4	3.35
2	9/1/1997	45	3.81		2	12/1/2001	102.0	4.62
1	10/1/1997	160	5.08		1	1/1/2002	47.8	3.87
2	10/1/1997	86	4.45		2	1/1/2002	116.0	4.75
1	11/1/1997	36	3.58		1	2/1/2002	57.3	4.05
2	11/1/1997	43	3.76		2	2/1/2002	105.0	4.65
1	12/1/1997	76	4.33		1	3/1/2002	61.0	4.11
2	12/1/1997	62	4.13		2	3/1/2002	152.0	5.02
1	1/1/1998	61	4.11		1	4/1/2002	74.4	4.31
2	1/1/1998	54	3.99		2	4/1/2002	297.0	5.69
1	2/1/1998	20	3.00		2	10/1/2002	235.0	5.46
2	2/1/1998	48	3.87		1	11/1/2002	77.2	4.35
1	3/1/1998	31	3.43		2	11/1/2002	222.0	5.40
2	3/1/1998	56	4.03		1	12/1/2002	33.8	3.52
1	5/1/1998	41	3.71		2	12/1/2002	194.0	5.27
2	5/1/1998	96	4.56		1	1/1/2003	67.6	4.21
2	10/1/1998	110	4.70		2	1/1/2003	147.0	4.99
1	11/1/1998	84	4.43		1	2/1/2003	20.7	3.03
2	11/1/1998	84	4.43		2	2/1/2003	120.0	4.79
1	12/1/1998	57	4.04		1	3/1/2003	43.8	3.78
2	12/1/1998	120	4.79		2	3/1/2003	158.0	5.06
1	1/1/1999	73	4.29		1	4/1/2003	51.2	3.94
2	1/1/1999	190	5.25		2	4/1/2003	191.0	5.25
1	2/1/1999	45	3.81		1	10/1/2003	66.0	4.19
2	2/1/1999	180	5.19		2	10/1/2003	242.0	5.49
1	3/1/1999	32	3.47		1	11/1/2003	110.0	4.70
2	3/1/1999	230	5.44		2	11/1/2003	190.0	5.25
1	4/1/1999	1.70	0.53		1	12/1/2003	83.0	4.42
2	4/1/1999	410	6.02		2	12/1/2003	453.0	6.12
1	5/1/1999	4.00	1.39		1	1/1/2004	51.8	3.95
2	5/1/1999	200	5.30		2	1/1/2004	160.0	5.08
2	10/1/1999	260	5.56		1	2/1/2004	75.6	4.33
1	11/1/1999	56	4.03		2	2/1/2004	199.0	5.29
2	11/1/1999	190	5.25		1	3/1/2004	95.1	4.55
1	12/1/1999	6.80	1.92		2	3/1/2004	250.0	5.52
2	12/1/1999	150	5.01					

Comments from Manke Lumber Company, Inc.

Comments Regarding the Mixing Zone

1. The Permittee has requested that they be granted six different mixing zones (one for each of the two outfalls, for three different seasons of the year).
2. The Permittee has cited WAC 173-201A-400 for providing an exemption to the numerical criteria for establishing mixing zones for stormwater discharges providing that three conditions have been met.
3. The Permittee has requested an exemption from the use of 2.5% of the receiving water streamflow for establishing the acute mixing zone. They are also requesting to establish a separate mixing zone for each outfall based on computer modeling.

Response to Comments Regarding the Mixing Zone

1. Based on the response to comment number 2 (below), the Department has evaluated the request and will not make an exemption to the numerical criteria for establishing mixing zones in this case. The dilution factors proposed by the Permittee have neglected to acknowledge WAC173-201A-100(8) concerning the consideration of 2.5% of the receiving water flow when defining the size of the mixing zones. The Permittee has evaluated the size of the mixing zones using 2.5% of the receiving water flow in the Mixing Zone Evaluation (Parametrix, November 1998) and has stated that using 2.5% of the receiving water to define a mixing zone boundary for stormwater discharges is too conservative. Since an exemption for using numerical criteria for defining mixing zone boundaries will not be allowed (see response to comment number 2, below), the permissible acute mixing zone must be limited by the most limiting of these factors: a) 2.5% flow of the receiving water, b) 10% of the length of the chronic mixing zone downstream of the outfall, and c) 25% of the width of the river or stream.

   The Department has also reviewed the request to authorize six separate mixing zones (one for each outfall, for three seasons of the year). Due to the toxic nature of the chemicals discharged and local water quality issues, the Department does not believe that it is in the public's best interest to authorize seasonal mixing zones based on anticipated average seasonal flow rates and implemented on a calendar basis. It is impossible to conservatively take into account the amount of rainfall occurring, the flow in the receiving water, and the amount of stormwater being discharged on a seasonal basis which is dependent upon weather and rainfall patterns. The response to issuing a separate mixing zone for each of the outfalls will be discussed in number 3 (below).
2. The Permittee has quoted WAC173-201A-400 which is based on the draft (not yet approved by EPA) Use-Based Surface Water Quality Standards. Since the draft version of WAC173-201A has not been approved by EPA, the Permittee must refer to the 1997 version of the regulation which is currently still in effect for regulating matters involving NPDES Permits. However, the language quoted in the draft WAC173-201A-400 is very similar to the language contained in the 1997 version of WAC173-201A-100. In an

effort to properly respond to the Permittee's comment, the Department will assume that the Permittee intended to refer to the 1997 version of WAC173-201A-100.

The stormwater exemption for using numerical criteria for establishing mixing zones has been raised in the past by other wood preserving businesses and has been closely evaluated by the Department due to concerns by federal agencies, the Tribes, and the public. It has been determined at that time, that the stormwater mixing zone numerical exemption should not be authorized for the wood preserving industry in the State of Washington in order to adequately protect the environment and water quality. No other wood preserving facility in Washington State has been granted an exempt mixing zone and in most cases, other facilities are not fully using their authorized mixing zone since they are able to meet more stringent limitations based on the performance of their treatment system. Performance-based limits are established for facilities in which all known and reasonable forms of treatment (AKART) can reduce pollutant concentrations below what would be required based on using Water Quality Standards.

3. As mentioned above, the Department will not make an exemption to the numerical criteria for establishing stormwater mixing zones. Therefore, the exemption from using 2.5% of the receiving water flow will not be granted.

   Based on the Department's review of the use of separate mixing zones versus the use of one combined mixing zone, the Department does not feel that the separate and combined effects of the discharges can be reasonably determined during all discharge scenarios in order to determine the worst case condition. Therefore, the Department will retain the use of a combined mixing zone.

Comments Regarding the Stormwater Discharge Limits

4. The Permittee states that arsenic and total chromium should not have effluent limits because the concentrations measured in the stormwater meet Water Quality Standards and when diluted are below the "reasonable potential to exceed" Water Quality Standards.

5. The Permittee states that there was an error in the permit where the form of chromium in the limitations (hexavalent chromium) does not match the form of chromium that is required for monitoring (total chromium).

Response to Comments Regarding the Stormwater Discharge Limits

4. The "reasonable potential to exceed" spreadsheet is a tool that is used by the Department to evaluate parameters in a discharge to determine whether or not they need to have limitations. This tool is not necessary when there is an obvious concern regarding parameters in the discharge. In this case, arsenic and total chromium are highly toxic and these parameters are directly linked to the use of CCA wood preservative as part of the industrial operations. There is no question that these two parameters are subject to both the water quality criteria and AKART. In this particular case, arsenic and total chromium are meeting water quality criteria at the mixing zone boundary but the standards also require that AKART is met which requires that performance-based limitations are established in order to ensure that AKART continues to be achieved.

5. The Department agrees that there is an inconsistency regarding the form of chromium in the permit limitations and monitoring requirements. This inconsistency has been

corrected. Both the interim and final limitation for chromium is based on the total form and is established as a performance limit which ensures that AKART is being achieved.

Comments Regarding the Copper Discharge Limit

6. The Permittee requested to raise copper limitations such that the requested changes to the dilution factors were accounted for (6 limitations total – three seasons at each of the two outfalls).

Response to Comments Regarding the Copper Discharge Limit

6. Since the Department does not agree to the requested changes to the dilution factors and does not agree that 6 dilution factors are necessary, the requested increases to the copper discharge limit do not apply here.

Comments Regarding the Permit Compliance Schedule

7. The Permittee requested a one-year extension to the compliance schedule proposed in the draft permit in order to conduct and complete the Permittee's proposed Water Effects Ratio (WER) Study.

   The Permittee provided (at a later date) the Department with a proposed compliance schedule which incorporates the time necessary to conduct a WER Study.

Response to Comments Regarding the Permit Compliance Schedule

7. The Department will not grant a one-year extension to the compliance schedule to conduct a WER Study. The Department feels that the time (approximately 4.5 years) proposed to be provided to the Permittee is generous. It is the Department's focus and strategy that the final effluent limitations will become effective during this permit cycle. Several other facilities have met compliance schedules much more stringent than this.

   The Department has reviewed the proposed schedule and has made some modifications to it. The order of some of the submittals (as proposed by the permittee) were rearranged to help guide the Permittee to meet the intentions of WAC 173-240 and the Permit Writer's Manual Appendix 6, Section 5.

Comments Regarding the Environmental Evaluation

8. The Permittee requested that the Fact Sheet contain mention and discussion of the report submittals and the history regarding the mixing zone study, Water Effects Ratio Study Workplan and WER Range-Finding Study, and their Salmonid Toxicity Assessment in the White River literature review.

Response to Comments Regarding the Environmental Evaluation

8. A discussion has been added to the Fact Sheet regarding these report submittals and the history and progress that has been made thus far.